

tion to them in view of the questions attaching to the observations of limbs.

As showing the amount of accidental error in observations of the Moon, the following comparison of altazimuth observations of Mösting A with transit-circle observations of the limbs has been made in R.A. As these are essentially different observations with different instruments, this comparison will give reliable values of the accidental errors.

Excess of Right Ascension of the Moon's Centre as obtained from Altazimuth Observations of Mösting A over Transit Circle Observations of the Moon's Limbs.

^s ·00	^s +·13	^s +·05	^s +·16
+·01	+·09	+·22	-·05
+·05	+·29	+·13	+·04
+·04	-·02	+·07	-·04
+·03	+·03	+·02	+·08
-·09	+·20	+·11	·00
-·01	+·03	+·27	+·08
+·11	+·01	+·12	+·03
-·04	+·03	-·10	-·19
+·08	+·15	+·03	...

The algebraic mean of these quantities is +^s·055, and the arithmetic mean $\pm^s\cdot083$ or $\pm^s\cdot072$ when the mean +^s·055 is taken out. If the observations of Mösting A with the altazimuth and of the limb with the transit circle be taken as equally accurate, the probable error of an observation is $\pm^s\cdot052$, or $\pm^s\cdot044$, according as the uncorrected or corrected value of the arithmetic mean is taken.

Royal Observatory, Greenwich :
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Lunar Nomenclature. By Walter Goodacre.

I think it will be readily granted by those who take an interest in lunar topography that the publication of Mr. S. A. Saunder's catalogue of 1433 measured points on the Moon's surface marks an epoch in selenography.

The completion of a task of this magnitude and importance could not fail to bring up once more the question of lunar nomenclature. The chaotic condition of this subject which at present exists and the urgent need for reform have been fully illustrated and set forth in the paper read by Mr. Saunder at the last meeting of the Society.

It now remains to be seen if it is not possible that some method can be devised by which the matter may be placed on some final and comprehensive basis.

Without going over the ground already covered by Mr. Saunder, it is sufficient to say that the nomenclature of Riccioli in the main was adopted by Beer and Mädler, and it has become the standard recognised by all subsequent selenographers, though all have made additions or alterations to it as they thought fit.

The real difficulty in lunar nomenclature is found to arise when we seek to formulate a system for marking and cataloguing the minor details which abound on the Moon's surface.

One great step towards the solution of this difficulty could be taken by dividing the Moon's surface into districts or provinces analogous to English counties, each of which would be associated as far as possible with some well-marked object already named as a centre.

This plan was proposed to the late W. R. Birt, F.R.A.S., by the late Rev. Dr. Richards, and was published in the *E.M.*, 1878 April 19. Mr. Birt expressed his approval of the scheme, and it was adopted, I believe, to some extent by the Council of the Selenographical Society. Had the plan been put to the test practical difficulties almost insurmountable would have been encountered, arising principally from the fact that whilst lunar charts, such as those of Neison and Schmidt, were then in existence, and could easily have been divided into conveniently sized districts, the boundary lines must of necessity have been of a purely arbitrary nature and liable to constant alteration, because in practice they would have been found in most cases out of harmony with the natural boundaries, as revealed in the telescope.

The numerous and excellent lunar photographs now in existence, and in which the true configuration of the surface in every part can be seen under suitable angles of illumination, will afford a ready means of tracing natural boundaries between the various objects, and thus rendering the task, which was impossible before, easy of accomplishment.

Having got our boundaries thus fixed, the question now arises as to the manner in which we are to mark and catalogue the various objects within these limited spaces, and it is upon this point that so many opinions are likely to arise, and from the discussion of which it may be hoped a generally accepted system may result.

It is purely with the object of eliciting the views of others that I venture to explain my own on this matter.

The publication of Mr. Saunder's catalogue, already referred to, makes some settlement of this question one of urgency.

In support of this statement I may mention one fact which, I think, amply bears it out.

In glancing down the columns in this catalogue it will be

seen that a number of objects whose positions he has measured are entered without a name or even a letter or number, showing that they are not marked in any way (if shown) on the various maps he has consulted. (A hurried count of these anonymous objects makes their number to be no less than 841 out of 1433.) In many cases there is no agreement between the maps in the lettering of minor objects, which renders it impossible to draw up a correct catalogue.

The want of a suitable method of lunar nomenclature was recognised by the Lunar Committee appointed more than thirty years ago by the British Association, when Mr. Birt and his colleagues drew up an entirely new system, which was as follows :

The Moon's surface was divided into the usual four quadrants—N.W., N.E., S.E., and S.W.—and numbered I. to IV., using Roman figures.

Each of these quadrants was again divided into sixteen grand divisions, distinguished by capital letters from A to Q, and consisting of an area of 25° square, except towards the limb, where of necessity only 15° remain on this hemisphere, and the remaining 10° extend into the further side, which is brought into view by libration.

Each of these grand divisions of 25° was further subdivided into twenty-five areas of 5° square, lettered in the same manner as the grand divisions with Greek letters, α to ω , the last space being left blank.

Finally, any object is distinguished by a number attached to the symbol denoting the small area of 5° square, which it is in, and also the quadrant. Thus I.A. α 50 would indicate that the small object numbered 50 was in the small 5° area marked α ; which is found in the grand division A in the N.W. or No. I quadrant.

This method was comprehensive and complete, but the necessity of using four symbols to indicate an object proves very cumbersome and has not met with general adoption; besides which the boundary lines would in many cases intersect each other on the site of large formations, so that we might have an object like Plato cut up in such a way as to be more or less in three or four differently numbered areas.

The plan now suggested is that the Moon should be divided into districts, each district having within its limit some well-known formation to which minor objects would be referred.

The largest craters within this area would be lettered with capital Roman letters A, B, C, &c., and the twenty-six letters of the alphabet should suffice; but to make this certain it would be necessary to apply such letters only to craters above a certain diameter.

Thus, for instance, the walled plain Clavius would form a suitable district, and the craters on the floor and walls would be

lettered as at present and known as Clavius A, Clavius B, and so on.

Then all the minor objects such as craterlets, ridges, hills, clefts, and spots would be simply numbered, and would be known as Clavius 1, Clavius 2, and so on. Reference to the catalogue would give the nature of the object so numbered. In this system it will be seen that we get rid of the necessity of distinguishing each class of objects by a separate class of symbol, and this by the use of a number only; and, further, this method would have the advantage of crowding the maps with fewer signs or figures than any other which seeks to differentiate one class of object from another by use of a different symbol.

It may be urged as an objection to this scheme that it presupposes the existence of an accurate map to be divided up.

Such does not exist; but for practical purposes Schmidt's map should be found sufficiently accurate for this purpose, and I would propose that the divisions be first found on photographs and then transferred to the map. The sections or divisions on the map could then be enlarged to any given scale, and have printed upon them a suitable réseau to be used for plotting accurately the position of objects from the coordinates given in Mr. Saunder's catalogue.

Report on Observations of Jupiter, 1904-5, made at Trincomali, Ceylon. By Major P. B. Molesworth.

Part I. Preliminary.

Arrangement of Report.—The present paper is in continuation of the observations for 1903-4, given in the *Monthly Notices*, vol. lxxv. No. 7. The nomenclature and arrangement are the same in both cases.

Telescope.—The 12 $\frac{3}{4}$ -inch Calver equatorial was again used; but for the greater part of the observations no driving clock was available, as the clock had been sent home to Messrs. Ottway of Ealing for a new one to be made. At the end of January the new driving clock (a very fine one) was installed and used till the end of the observations.

Scope of the Observations.—Work was begun in the early mornings on 1904 June 3, and carried on steadily till June 20. At this point I was suddenly laid up with a sharp attack of pleurisy and fever, which necessitated my taking leave home as soon as I was convalescent. No astronomical work was done in England owing to ill-health, but observations were resumed as soon as I returned to Trincomali on 1904 November 26. Regular work was carried on up to 1905 February 13, when a spell of very bad observing weather set in, and very few more visual